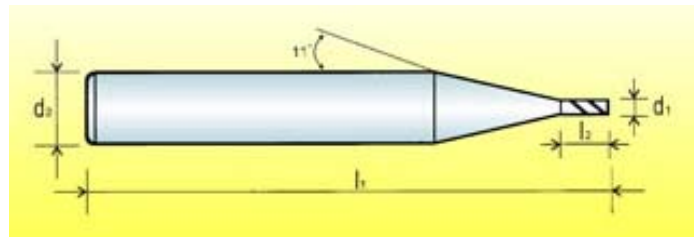


FRESAS DE TOPO RETO – MICRO-DIÂMETRO METAL DURO – 2 CORTES

Código	Diâmetro (D1)	Comp. Útil (L2)	Comp. Total (L1)	Haste (D2)
2MSB-002	0.2	0.4	50	4
2MSB-003	0.3	0.6	50	4
2MSB-004	0.4	0.8	50	4
2MSB-005	0.5	1.0	50	4
2MSB-006	0.6	1.2	50	4
2MSB-007	0.7	1.4	50	4
2MSB-008	0.8	1.6	50	4
2MSB-009	0.9	1.8	50	4

8% IPI



Cobertura

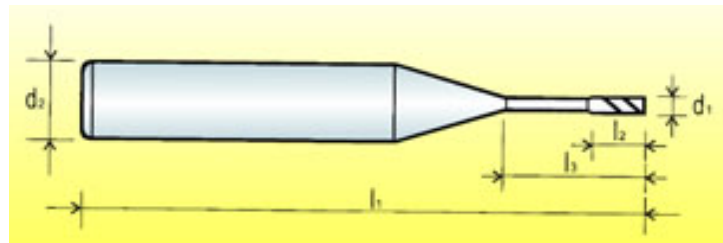
AlTiN



FRESAS DE TOPO RETO – MICRO-DIÂMETRO METAL DURO – 2 CORTES – LONG NECK

Código	Diâmetro (D1)	Comp. Útil (L2)	Comp. Haste Paralela (L3)	Comp. Total (L1)	Haste (D2)
2XL-004-02	0.4	0.6	2	50	4
2XL-005-06	0.5	0.8	6	50	4
2XL-006-08	0.6	1.0	8	50	4
2XL-008-10	0.8	1.2	10	50	4
2XL-010-12	1.0	1.2	12	50	4
2XL-015-12	1.5	1.7	12	50	4
2XL-020-16	2.0	2.2	16	75	4
2XL-030-20	3.0	3.2	20	75	4

8% IPI



Cobertura

AlTiN

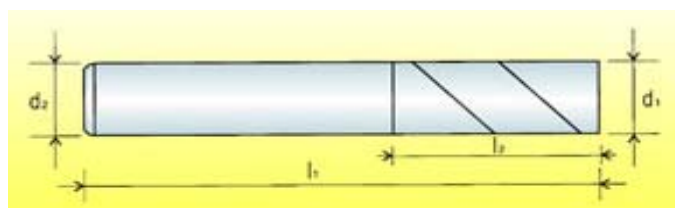


FRESAS DE TOPO RETO – METAL DURO – 2 CORTES - CURTA



Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
2EM-010	1.0	3	50	4
2EM-015	1.5	4.5	50	4
2EM-020	2.0	6	50	4
2EM-025	2.5	7	50	4
2EM-030	3.0	8	50	4
2EM-035	3.5	10	50	4
2EM-040	4.0	11	50	4
2EM-045	4.5	13	50	6
2EM-050	5.0	13	50	6
2EM-055	5.5	13	50	6
2EM-060	6.0	15	50	6
2EM-065	6.5	17	60	8
2EM-070	7.0	17	60	8
2EM-075	7.5	17	60	8
2EM-080	8.0	20	60	8
2EM-085	8.5	23	75	10
2EM-090	9.0	23	75	10
2EM-095	9.5	25	75	10
2EM-100	10.0	25	75	10
2EM-105	10.5	25	75	12
2EM-110	11.0	28	75	12
2EM-115	11.5	28	75	12
2EM-120	12.0	30	75	12
2EM-130	13.0	33	100	16
2EM-140	14.0	35	100	16
2EM-150	15.0	38	100	16
2EM-160	16.0	40	100	16
2EM-170	17.0	40	100	20
2EM-180	18.0	40	100	20
2EM-190	19.0	40	100	20
2EM-200	20.0	40	100	20
2EM-220	22.0	40	100	25
2EM-250	25.0	40	100	25

8% IPI



Cobertura

TiAIN

FRESAS DE TOPO RETO – METAL DURO – 2 CORTES

MÉDIA

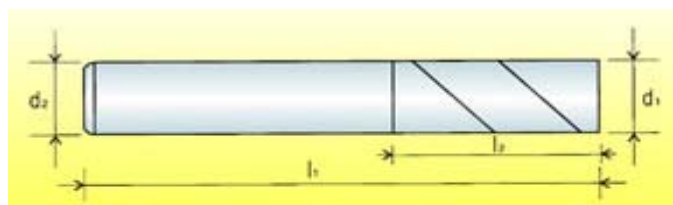
Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
2EMA-030	3.0	15	75	4
2EMA-040	4.0	20	75	4
2EMA-050	5.0	25	75	6
2EMA-060	6.0	25	75	6
2EMA-080	8.0	30	75	8

LONGA

Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
2EMB-040	4.0	25	100	6
2EMB-050	5.0	30	100	6
2EMB-060	6.0	30	100	6
2EMB-070	7.0	35	100	8
2EMB-080	8.0	35	100	8
2EMB-090	9.0	40	100	10
2EMB-100	10.0	40	100	10
2EMB-110	11.0	45	100	12
2EMB-120	12.0	45	100	12



8% IPI



Cobertura

TiAlN

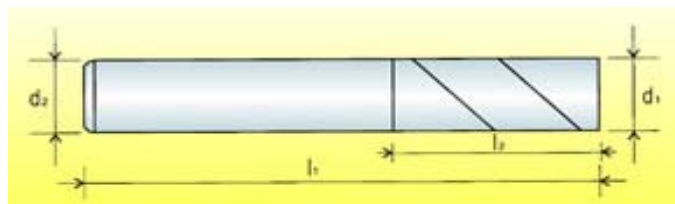
FRESAS DE TOPO RETO – METAL DURO – 4 CORTES - CURTA



Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4EM-010	1.0	3	50	4
4EM-015	1.5	4.5	50	4
4EM-020	2.0	6	50	4
4EM-025	2.5	7	50	4
4EM-030	3.0	8	50	4
4EM-035	3.5	10	50	4
4EM-040	4.0	11	50	4
4EM-045	4.5	13	50	6
4EM-050	5.0	13	50	6
4EM-060	6.0	15	50	6
4EM-070	7.0	17	60	8
4EM-080	8.0	20	60	8
4EM-090	9.0	23	75	10
4EM-100	10.0	25	75	10
4EM-110	11.0	28	75	12
4EM-120	12.0	30	75	12
4EM-130	13.0	33	100	16
4EM-140	14.0	35	100	16
4EM-150	15.0	38	100	16
4EM-160	16.0	40	100	16
4EM-170	17.0	40	100	20
4EM-180	18.0	40	100	20
4EM-190	19.0	40	100	20
4EM-200	20.0	40	100	20
4EM-220	22.0	40	100	25
4EM-250	25.0	40	100	25



8% IPI



Cobertura

TiAlN

FRESAS DE TOPO RETO – METAL DURO – 4 CORTES

MÉDIA

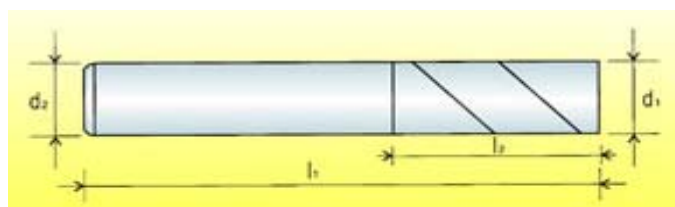
Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4EMA-030	3.0	15	75	4
4EMA-040	4.0	20	75	4
4EMA-050	5.0	25	75	6
4EMA-060	6.0	25	75	6
4EMA-080	8.0	30	75	8



LONGA

Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4EMB-040	4.0	25	100	6
4EMB-050	5.0	30	100	6
4EMB-060	6.0	30	100	6
4EMB-070	7.0	35	100	8
4EMB-080	8.0	35	100	8
4EMB-090	9.0	40	100	10
4EMB-100	10.0	40	100	10
4EMB-110	11.0	45	100	12
4EMB-120	12.0	45	100	12

8% IPI



Cobertura

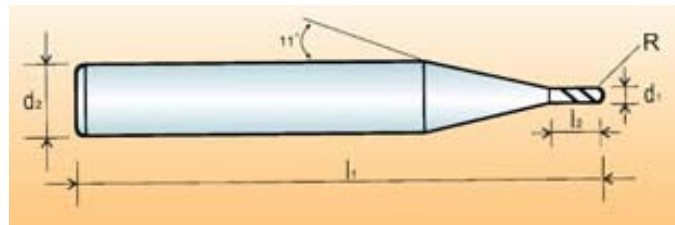
TiAIN

FRESAS DE TOPO ESFÉRICO – MICRO-DIÂMETRO METAL DURO – 2 CORTES

Código	Diâmetro (D1)	Comp. Útil (L2)	Comp. Total (L1)	Haste (D2)
2BKB-003	0.3	0.6	50	4
2BKB-004	0.4	0.8	50	4
2BKB-005	0.5	1	50	4
2BKB-006	0.6	1.2	50	4
2BKB-007	0.7	1.4	50	4
2BKB-008	0.8	1.6	50	4
2BKB-009	0.9	1.8	50	4



8% IPI



Cobertura

AlTiN

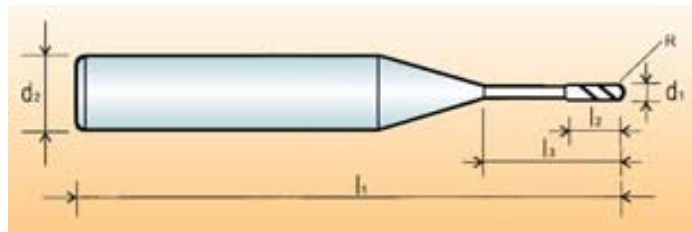


FRESAS DE TOPO ESFÉRICO – MICRO-DIÂMETRO METAL DURO – 2 CORTES – LONG NECK

Código	Diâmetro (D1)	Comp. Útil (L2)	Comp. Haste Paralela (L3)	Comp. Total (L1)	Haste (D2)
2BR-004-04	0.4	0.6	4	50	4
2BR-005-06	0.5	0.8	6	50	4
2BR-006-08	0.6	1.0	8	50	4
2BR-008-10	0.8	1.2	10	50	4
2BR-010-12	1.0	1.2	12	50	4
2BR-015-12	1.5	1.7	12	50	4
2BR-020-16	2.0	2.2	16	75	4
2BR-030-20	3.0	3.2	20	75	4



8% IPI



Cobertura

AlTiN

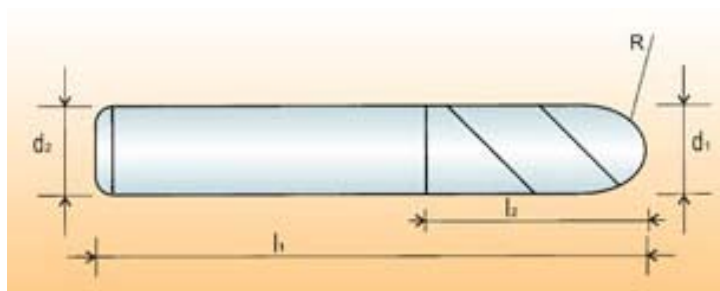


FRESAS DE TOPO ESFÉRICO – METAL DURO – 2 CORTES - CURTA



Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
2BZ-010	1.0	2.0	50	4
2BZ-015	1.5	3.0	50	4
2BZ-020	2.0	4.0	50	4
2BZ-025	2.5	5.0	50	4
2BZ-030	3.0	6.0	50	4
2BZ-035	3.5	7.0	50	4
2BZ-040	4.0	8.0	50	4
2BZ-045	4.5	9.0	50	6
2BZ-050	5.0	10.0	50	6
2BZ-055	5.5	11.0	50	6
2BZ-060	6.0	12.0	50	6
2BZ-065	6.5	13.0	60	8
2BZ-070	7.0	14.0	60	8
2BZ-075	7.5	15.0	60	8
2BZ-080	8.0	16.0	60	8
2BZ-090	9.0	18.0	75	10
2BZ-100	10.0	20.0	75	10
2BZ-120	12.0	24.0	75	12
2BZ-160	16.0	30.0	100	16
2BZ-200	20.0	30.0	100	20
2BZ-250	25.0	30.0	100	25

8% IPI



Cobertura

TiAlN

FRESAS DE TOPO ESFÉRICO – METAL DURO – 2 CORTES - MÉDIA

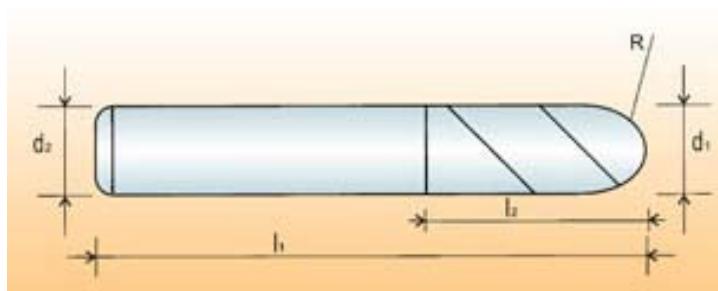
Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
2BZA-030	3.0	6	75	4
2BZA-040	4.0	8	75	4
2BZA-050	5.0	10	75	6
2BZA-060	6.0	12	75	6
2BZA-080	8.0	16	75	8



LONGA

Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
2BZB-040	4.0	8	100	6
2BZB-050	5.0	10	100	6
2BZB-060	6.0	12	100	6
2BZB-080	8.0	16	100	8
2BZB-100	10.0	20	100	10
2BZB-120	12.0	24	100	12

8% IPI



Cobertura

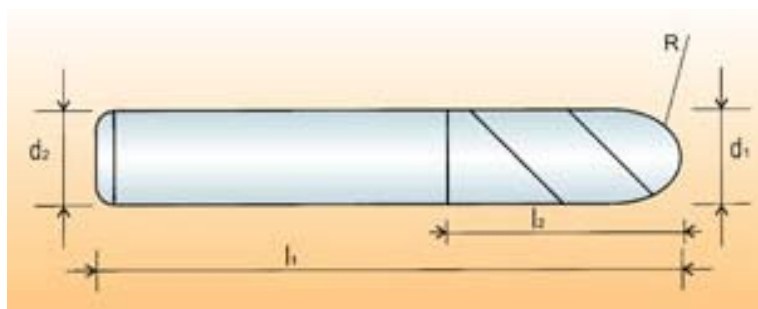
TiAIN

FRESAS DE TOPO ESFÉRICO – METAL DURO – 4 CORTES - CURTA



Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4BZ-010	1.0	2.0	50	4
4BZ-015	1.5	3.0	50	4
4BZ-020	2.0	4.0	50	4
4BZ-025	2.5	5.0	50	4
4BZ-030	3.0	6.0	50	4
4BZ-035	3.5	7.0	50	4
4BZ-040	4.0	8.0	50	4
4BZ-045	4.5	9.0	50	6
4BZ-050	5.0	10.0	50	6
4BZ-060	6.0	12.0	50	6
4BZ-070	7.0	14.0	60	8
4BZ-080	8.0	16.0	60	8
4BZ-090	9.0	18.0	75	10
4BZ-100	10.0	20.0	75	10
4BZ-120	12.0	24.0	75	12
4BZ-160	16.0	30.0	100	16
4BZ-200	20.0	30.0	100	20
4BZ-250	25.0	30.0	100	25

8% IPI



Cobertura

TiAlN

FRESAS DE TOPO ESFÉRICO – METAL DURO – 4 CORTES

MÉDIA

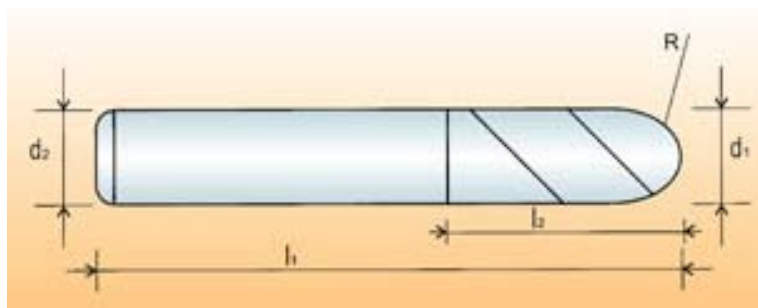
Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4BZA-030	3.0	6	75	4
4BZA-040	4.0	8	75	4
4BZA-050	5.0	10	75	6
4BZA-060	6.0	12	75	6
4BZA-080	8.0	16	75	8



LONGA

Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4BZB-040	4.0	8	100	6
4BZB-050	5.0	10	100	6
4BZB-060	6.0	12	100	6
4BZB-080	8.0	16	100	8
4BZB-100	10.0	20	100	10
4BZB-120	12.0	24	100	12

8% IPI



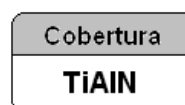
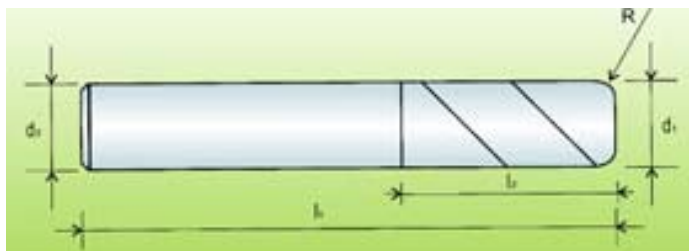
Cobertura

TiAIN

FRESAS DE TOPO COM RAIO – METAL DURO – 2 CORTES - CURTA

Código	Diâmetro (D1)	R	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
2MR-020-05	2.0	0.5	4	50	4
2MR-030-05	3.0	0.5	6	50	4
2MR-030-10	3.0	1.0	6	50	4
2MR-040-05	4.0	0.5	8	50	4
2MR-040-10	4.0	1.0	8	50	4
2MR-050-05	5.0	0.5	10	50	6
2MR-050-10	5.0	1.0	10	50	6
2MR-060-05	6.0	0.5	12	50	6
2MR-060-10	6.0	1.0	12	50	6
2MR-080-05	8.0	0.5	16	60	8
2MR-080-10	8.0	1.0	16	60	8
2MR-080-15	8.0	1.5	16	60	8
2MR-080-20	8.0	2.0	16	60	8
2MR-100-05	10.0	0.5	20	75	10
2MR-100-10	10.0	1.0	20	75	10
2MR-100-15	10.0	1.5	20	75	10
2MR-100-20	10.0	2.0	20	75	10
2MR-120-05	12.0	0.5	24	75	12
2MR-120-10	12.0	1.0	24	75	12
2MR-120-15	12.0	1.5	24	75	12
2MR-120-20	12.0	2.0	24	75	12

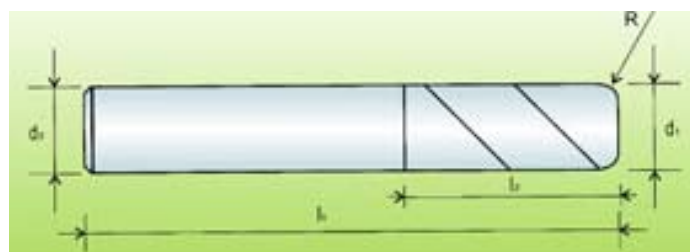
8% IPI



FRESAS DE TOPO COM RAIO – METAL DURO – 4 CORTES - CURTA

Código	Diâmetro (D1)	R	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4MR-020-05	2.0	0.5	4	50	4
4MR-030-05	3.0	0.5	6	50	4
4MR-030-10	3.0	1.0	6	50	4
4MR-040-05	4.0	0.5	8	50	4
4MR-040-10	4.0	1.0	8	50	4
4MR-050-05	5.0	0.5	10	50	6
4MR-050-10	5.0	1.0	10	50	6
4MR-060-05	6.0	0.5	12	50	6
4MR-060-10	6.0	1.0	12	50	6
4MR-080-05	8.0	0.5	16	60	8
4MR-080-10	8.0	1.0	16	60	8
4MR-080-15	8.0	1.5	16	60	8
4MR-080-20	8.0	2.0	16	60	8
4MR-100-05	10.0	0.5	20	75	10
4MR-100-10	10.0	1.0	20	75	10
4MR-100-15	10.0	1.5	20	75	10
4MR-100-20	10.0	2.0	20	75	10
4MR-120-05	12.0	0.5	24	75	12
4MR-120-10	12.0	1.0	24	75	12
4MR-120-15	12.0	1.5	24	75	12
4MR-120-20	12.0	2.0	24	75	12

8% IPI



Cobertura

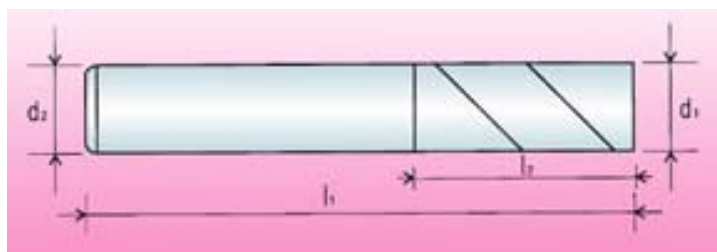
TiAlN

FRESAS DE TOPO – METAL DURO – DESBASTE - 4 CORTES

CURTA

Código	Diâmetro (D1)	Comprimento Útil (L2)	Comprimento Total (L1)	Haste (D2)
4CDA-060	6.0	15	50	6
4CDA-080	8.0	20	60	8
4CDA-100	10.0	25	75	10
4CDA-120	12.0	30	75	12
4CDA-160	16.0	40	100	16

8% IPI



Cobertura

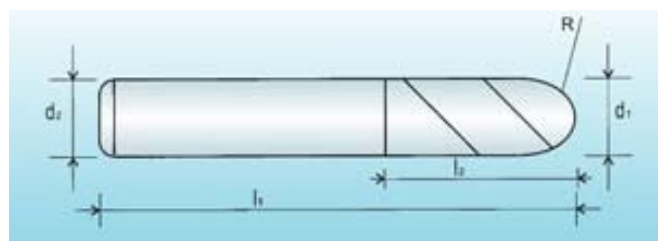
TiAlN

FRESAS DE TOPO ESFÉRICO PARA ALUMÍNIO – 2 CORTES

TIPO CURTA

Código	Diâmetro (D1)	Comp. Útil (L2)	Comp. Total (L1)	Haste (D2)
2AB-010	1.0	2	50	4
2AB-020	2.0	4	50	4
2AB-030	3.0	6	50	4
2AB-040	4.0	8	50	4
2AB-050	5.0	10	50	6
2AB-060	6.0	12	50	6
2AB-080	8.0	16	60	8
2AB-100	10.0	20	75	10
2AB-120	12.0	24	75	12
2AB-160	16.0	30	100	16
2AB-200	20.0	30	100	20

8% IPI



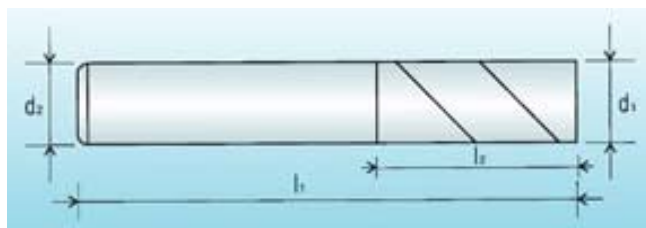
FRESAS DE TOPO RETO PARA ALUMÍNIO – 3 CORTES

TIPO CURTA

Código	Diâmetro (D1)	Comp. Útil (L2)	Comp. Total (L1)	Haste (D2)
3AE-010	1.0	3	50	4
3AE-020	2.0	6	50	4
3AE-030	3.0	8	50	4
3AE-040	4.0	11	50	4
3AE-050	5.0	13	50	6
3AE-060	6.0	15	50	6
3AE-070	7.0	18	60	8
3AE-080	8.0	20	60	8
3AE-090	9.0	23	75	10
3AE-100	10.0	25	75	10
3AE-110	11.0	28	75	12
3AE-120	12.0	30	75	12
3AE-160	16.0	40	100	16
3AE-200	20.0	40	100	20



8% IPI



FRESAS DE TOPO RETO PARA ALUMÍNIO – 3 CORTES

TIPO LONGA

Código	Diâmetro (D1)	Comp. Útil (L2)	Comp. Total (L1)	Haste (D2)
3AEB-030	3.0	15	100	6
3AEB-040	4.0	20	100	6
3AEB-050	5.0	25	100	6
3AEB-060	6.0	30	100	6
3AEB-080	8.0	35	100	8
3AEB-100	10.0	40	100	10
3AEB-120	12.0	45	100	12



8% IPI

